- d) culturing the host cell; and
- e) recovering the immunoglobulin from the host cell culture said immunoglobulin being capable of binding to a known antigen.
- 54. The method of claim 53 wherein the heavy or light chain are the heavy or light chains of anti-CEA antibody.
- 55. The method of claim 58 wherein the heavy chain is of the gamma family.
- 56. The method of claim 53 wherein the light chain is of the kappa family.
- 57. The method of claim 53 wherein the vector contains DNA encoding both a heavy chain and a light chain.
- 58. The method of claim 53 wherein the host cell is \underline{E} . coli or yeast.
- 59. The method of claim 58 wherein the heavy chain, light chain or Fab region is deposited within the cells as insoluble particles.
- 60. The method of claim 59 wherein the heavy or light chains are recovered from the particles by cell lysis followed by solubilization in denaturant.

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- 61. The method of claim 53 wherein the heavy or light chain is secreted into the medium.
- 62. The method of claim 53 wherein the host cell is a gram negative bacterium and the heavy or light chain is secreted into the periplasmic space of the host cell bacterium.
- 63. The method of claim 53 further comprising recovering both heavy and light chain and reconstituting light chain and heavy chain to form an immunoglobulin having specific affinity for a particular known antigen.
- 64. The insoluble particles of heavy chain, light chain or Fab region produced by the method of claim 59.
- 65. A replicable expression vector comprising DNA operably linked to a promoter compatible with a suitable procaryotic or eukaryotic microbial host cell, said DNA consisting essentially of DNA encoding an immunoglobulin heavy chain, light chain or Fab region having specificity for a particular known antigen.

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Recombinant host cells transformed with the vector of claim 66.